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REMARKS/ARGUMENTS

Claims 2, 4, and 15 have been canceled and claims 1, 3, 6-14, 16-21, and 24-25 have been amended. Claims 26 and 27 have been added. Claims 1, 3, 5-14, 16-21, and 24-27 are currently pending. No new matter has been inserted.

Claim 1 includes the features of canceled claims 2 and 15. Claim 3 has been amended to change and clarify its dependency. Claim 6 was amended to make it more clear. Claims 7, 9, 11, 13, and 21 were amended to correct their dependencies after the claim numbering change initiated by the Examiner. Claims 8, 10, 12, 14, and 20 were amended to both correct their dependencies after the claim number change initiated by the Examiner and to insert SEQ ID NO's for purposes of clarification. Claims 16-18 were amended to both correct their dependencies after the claim number change initiated by the Examiner and to make the language more clear. Claim 19 and 24 were also amended to make the language more clear. Claim 25 was amended to insert a SEQ ID NO for purposes of clarification.

Claim 25 was objected to because it recited an amino acid sequence without a corresponding SEQ ID NO: tag. Claim 25 has been amended obviating this objection.

Claims 1-3, 5-21, and 24-25 are rejected under 35 U.S.C. § 112, first paragraph, for written description. Specifically, the Office Action states that the Applicants have not described a function which is shared by modified toxins comprising a disulfide loop region which would adequately describe the genus. Applicants respectfully traverse this rejection.

The written description requirement has been satisfied because the specification adequately describes sufficient structural features to clearly allow persons of ordinary skill in the art to recognize that the inventor has invented the claimed modified toxins. *See Union Oil Co. of Cal. v. Atlantic Richfield Co.*, 54 USPQ2d 1227, 1232 (Fed. Cir. 2000).

The present application states that the staphylococcal enterotoxins A, B, C1, C2, C3, D, E, G and H share a common structural feature of a disulfide bond not present in other enterotoxins (see p. 2, lines 24-26). The precise position of the disulfide bond in a number of enterotoxins is shown in Table 2 (see p. 3).

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Moreover, the written description requirement can also be satisfied where the structural features are correlated with a particular function within the knowledge of those of skill in the art. *See Moba v. Diamond Automation, Inc.*, 325 F.3d 1306, 1321 (Fed. Cir. 2003).

Importantly, the disulfide bond has been shown to be important in the toxicity of mutants of SEC1 (see p. 5, lines 6-9). SEC1, SEC2, SEC3, and related isolates share approximately 95% sequence similarity (see p. 2, lines 14-15). The alignment of the predicted sequences of the eight known SEC variants following cleavage of the signal peptide is shown in Table 1 (see p. 17). The claimed toxins are all modified at the disulfide loop region and this structural feature correlates with disclosed functions of the toxins.

Accordingly, the applicants respectfully submit that the written description requirement has been satisfied and withdrawal of this rejection is respectfully requested.

Claims 1, 19, and 24 are rejected under 35 U.S.C. §112, second paragraph, as indefinite. Specifically, the Office Action states that the claims are vague and indefinite in the use of the phrase "derived." Applicants respectfully traverse this rejection.

While not conceding the validity of the rejection, in the interest of advancing prosecution, claims 1, 19, and 24 have been amended rendering the rejection moot. Withdrawal of this rejection is respectfully requested.

Claims 15 is rejected under 35 U.S.C. §112, second paragraph, as indefinite. Specifically, the Office Action states that the claims are vague and indefinite in the recitation of "substantially decreased toxicity." Applicants respectfully traverse this rejection.

While not conceding the validity of the rejection, in the interest of advancing prosecution, claim 15 has been canceled rendering the rejection moot. Withdrawal of this rejection is respectfully requested.

Claims 16-19 are rejected under 35 U.S.C. §112, second paragraph, as indefinite. Specifically, the Office Action states that the claims are vague and indefinite in the use of the phrase "at least about 100-fold/40%." Applicants respectfully traverse this rejection.

While not conceding the validity of the rejection, in the interest of advancing prosecution, claims 16-19 have been amended rendering the rejection moot. Withdrawal of this rejection is respectfully requested.

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Claims 8, 10, 12, 14, and 20 are rejected under 35 U.S.C. §112, second paragraph, as indefinite. Specifically, the Office Action states that the claims are vague and indefinite in the use of the phrase "amino acid position ##." Applicants respectfully traverse this rejection.

While not conceding the validity of the rejection, in the interest of advancing prosecution, claims 8, 10, 12, 14, and 20 have been amended rendering the rejection moot.

Claims 1-3, 5-21, and 24 are rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Olivera et al. (USPN 5,885,780). Applicants respectfully traverse this rejection.

Olivera discloses a method for separating, identifying and purifying small conotoxin-like rigidly conformed peptides containing multiple Cysteine residues. The conotoxins of Olivera are typically from 10-30 amino acids in length (see col. 4, lines 12-16). Notably, the conotoxins of Olivera are not disclosed as pyrogenic, nor is it stated that they are fever causing.

Independent claim 1 requires a "modified staphylococcal pyrogenic toxin." Claim 1 further requires that the modified toxin has toxicity that is reduced in comparison to the unmodified native toxin. Because Olivera does not disclose a pyrogenic toxin and does not disclose a modified toxin with reduced toxicity, Olivera does not anticipate claim 1. As claims 2-18 are dependent on claim 1, they are also not anticipated.

Independent claim 19 requires a "pyrogenic toxin." As discussed above, Olivera does not disclose a pyrogenic toxin. Accordingly, Olivera does not anticipate claim 19. As claims 20-21 are dependent on claim 19, they are also not anticipated.

Independent claim 24 requires a "pyrogenic toxin." As discussed above, Olivera does not disclose a pyrogenic toxin. Accordingly, Olivera does not anticipate claim 24. As claim 25 is dependent on claim 24, it is also not anticipated.

Withdrawal of this rejection is respectfully requested.

In light of the foregoing Amendment and Remarks, Applicants' assert the claims are in condition for allowance. Removal of all rejections and early notice of allowable claims is requested.

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The Examiner is invited to telephone the undersigned attorney for clarification of any of these Remarks or Amendments, or to otherwise speed prosecution of this case.

Respectfully submitted,

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Date

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